

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	278	166/177.4.ccls.	US-PGPUB; USPAT; USOCR	AND	OFF	2010/03/23 11:27
L3	19	L2 (spiral OR helical)	US-PGPUB; USPAT; USOCR	AND	OFF	2010/03/23 11:27
L4	232	137/808,809.ccls.	US-PGPUB; USPAT; USOCR	AND	OFF	2010/03/23 11:31
L5	41	L4 (spiral OR helix)	US-PGPUB; USPAT; USOCR	AND	OFF	2010/03/23 11:31
L6	48	L4 (spiral OR helix OR helical)	US-PGPUB; USPAT; USOCR	AND	OFF	2010/03/23 11:31
L9	683	138/39.ccls.	US-PGPUB; USPAT; USOCR	AND	OFF	2010/03/23 11:38
L10	99	L9 (spiral OR helix OR helical)	US-PGPUB; USPAT; USOCR	AND	OFF	2010/03/23 11:38
S1	1	("20060000993").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2008/09/04 16:48
S2	1	("5570744").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2008/09/04 16:54
S3	8	("1959368" "2178846" "3351136" "5570744" "6723158").PN.	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:24
S4	895	166/285.ccls.	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:26
S7	3	S4 decelerating	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:31
S8	23	S4 spiral	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:31
S9	0	S7 S8	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:31

S10	270	138/142.ccls.	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:45
S11	0	S10 downhole	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:45
S12	0	S10 wellbore	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:45
S13	0	S12 shoe	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:45
S14	82	"166".clas. spiral valve shoe	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:50
S15	229	"166".clas. (spiral OR helical) valve shoe	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:51
S16	114	"166".clas. (spiral OR helical) valve shoe (latch OR lock)	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 10:51
S17	80	S4 (float ADJ collar)	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 11:05
S18	2	S17 (anti-rotation)	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 11:10
S19	0	S17 (axial ADJ (lock OR locking))	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 11:44
S20	1	S4 (axial ADJ (lock OR locking))	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 11:44
S21	0	"166".clas. shoe NEAR (axial ADJ (lock OR locking))	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 11:44
S22	0	"166".clas. (shoe NEAR (axial ADJ (lock OR locking)))	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 11:44
S23	0	"166".clas. (shoe WITH (axial ADJ (lock OR locking)))	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 11:44
S24	30	"166".clas. ((axial ADJ (lock OR locking)))	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 11:45
S25	189	S4 (lock OR locking OR latch)	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 11:46

S26	5	S4 ((lock OR locking OR latch) NEAR shoe)	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 11:46
S27	2	S4 ((opposite OR opposing) NEAR (helix OR helical OR sprial))	US-PGPUB; USPAT; USOCR	AND	OFF	2008/09/05 14:00
S28	0	("2178846").URPN.	USPAT	AND	OFF	2009/04/13 17:21
S29	635	138/142.ccls. OR 251/126.ccls.	US-PGPUB; USPAT; USOCR	AND	OFF	2009/04/13 17:23
S30	2	S29 decelerate	US-PGPUB; USPAT; USOCR	AND	OFF	2009/04/13 17:24
S31	106	S29 (sprial OR helical OR helix)	US-PGPUB; USPAT; USOCR	AND	OFF	2009/04/13 17:24
S32	87	"166".clas. insert shoe (spiral OR helix OR helical)	US-PGPUB; USPAT; USOCR	AND	OFF	2009/04/13 17:28
S33	8	("4787457" "4842066" "4869323" "5107927" "5165476" "5318119" "5829526").PN. OR ("6311774").URPN.	US-PGPUB; USPAT; USOCR	AND	OFF	2009/10/15 18:39
S34	20	("1801983" "3014530" "3557562" "3637019" "3726340" "3901319").PN. OR ("4083406").URPN.	US-PGPUB; USPAT; USOCR	AND	OFF	2009/10/15 18:51
S35	944	166/285.ccls.	US-PGPUB; USPAT; USOCR	AND	OFF	2009/10/16 10:37
S36	2002	166/286,300,162,177.ccls.	US-PGPUB; USPAT; USOCR	AND	OFF	2009/10/16 10:44
S37	565597	(spiral OR helical OR helix)	US-PGPUB; USPAT; USOCR	AND	OFF	2009/10/16 10:44
S38	55	S36 S37	US-PGPUB; USPAT; USOCR	AND	OFF	2009/10/16 10:45
S39	25	("2668592" "2716454" "3157232" "3612181").PN. OR ("3727691").URPN.	US-PGPUB; USPAT; USOCR	AND	OFF	2009/10/16 11:07
S40	3	S39 (spiral OR helical OR helix)	US-PGPUB; USPAT; USOCR	AND	OFF	2009/10/16 11:07

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L23	39	(insert spiral portion cavity).clm.	USPAT; UPAD	AND	OFF	2010/03/23 12:30
L24	0	(downhole control spiral portion cavity).clm.	USPAT; UPAD	AND	OFF	2010/03/23 12:32
L25	123	(valve spiral portion cavity).clm.	USPAT; UPAD	AND	OFF	2010/03/23 12:32
L26	79	(flow valve spiral portion cavity).clm.	USPAT; UPAD	AND	OFF	2010/03/23 12:32
L27	0	(decelerating spiral portion cavity).clm.	USPAT; UPAD	AND	OFF	2010/03/23 12:32

3/ 23/ 2010 12:32:56 PM

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